NOTE IV.

ON DIDELPHIS CAUDIVOLVULA KERR AND DIDELPHIS VULPECULA KERR.

BY

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Some months ago I was happy enough to procure for our library the rare Animal Kingdom written by Kerr. This author described clearly two Phalangers under the names *New-Holland Opossum* and *Vulpine Opossum:* these descriptions have been overlooked by all the naturalists who have studied the Phalanger-group.

As the specimens of these two species are greatly varying in color, and these varieties have been described as species, I will try to give a synonymy as complete as possible and to describe in short terms the individuals in our collection in order to give the reader an impression of the variation in color of the species in question.

The species quoted belong to two distinct genera, characterized as follows:

Pseudochirus: Phalangers with the two inner toes of the fore foot separated from and partially opposable to, the other three: the tail clothed, excepting at the apex beneath, with short adpressed hairs. The ears short and rounded (Waterhouse, Marsupiata. I. p. 297).

Trichosurus: Tail densely clothed with fur, with the exception of a part of the under surface, commencing at

the point, and more or less extended towards the root of the tail: ears distinct, usually long: fore feet normal (i. e. with no marked separation of the two inner from the three outer toes). (Waterhouse, Marsupiata. I. p. 283).

Pseudochirus caudivolvulus.

1792. *Didelphis caudivolvula* Kerr. The animal Kingdom. p. 196. (New-Holland Opossum).
1817. *Phalangista Cookii* Desmarest. Nouv. Dict. d'Hist. natur. XXV. p. 476.
1837. *Phalangista viverrina* Ogilby. P. Z. S. L. p. 131.
1838. *Phalangista Banksii* Gray. Ann. and Mag. Nat. Hist. p. 107.
1843. *Phalangista* (*Trichurus*) *bougainvillei* Wagner. Schreber's Säugethiere. Suppl. Bd. III. p. 82.
1846. *Phalangista* (*Pseudochirus*) *canescens* Waterhouse. Natural History of the Mammalia. Vol. I. p. 305.
1863. *Pseudochirus lanuginosus*. Gould. Mammals of Australia.

Kerr described the species as follows: »Inhabits New-Holland, near Endeavour-river. The head and body are about thirteen inches long, being covered on the upper part and the sides with long, soft, glossy hairs, of a dark cinereous colour at the roots, and rusty brown at the ends; the tail is taper and of the same length with the head and body; two-thirds of its length is covered with short brown hair, the extremity being white, and naked underneath; the paws are furnished with thumbs having flat nails, and the toes have short claws: This species lodges among the long grass, but is little known. The tail is taper, hairy and prehensile at the end".

Now I proceed to register the specimens of this species in the Leyden Museum, adding short diagnoses.

1. Adult male. Australia, Clarence river. From Strange's voyage. Rusty colored, mixed with black on the back; underparts bright rusty, ears behind similarly colored.

2. Nearly fullgrown male. Australia. Frank, 1845. Like

N°. 1, but upperparts of head and tail blackish, back grizzled and underparts of body brighter.

3. Nearly fullgrown male. Australia. Upperparts sooty-grey; head above, outside of legs and tail light rusty; ears behind, underparts of head and of body and inside of legs pure white.

4. Nearly fullgrown male. Australia. Frank, 1845. Head above, back, sides of body, upperhalf of legs and tail dark mouse grey; lower half of legs externally and a circle round the eyes light rusty; ears behind, underparts of body and of head and inside of legs pure white.

5. Female, mother of N°s. 6 and 7. Australia, 1870. Colored like N°. 4.

6 and 7. Young specimens. Upperparts generally darker than in N°. 5, outside of legs lighter. Circle round the eyes dark rusty. For the rest like the mother.

8. Young individual. Australia. Colored like the former young specimens.

9. Adult female, described by Temminck (Mammalogie. I. p. 7). According to the named author this specimen is one from Cook's voyage. Now I find that in Cook's account there is only question of two individuals, viz: a female from Endeavour river (1770) and a male from Van Diemensland (1777). Temminck says that the *female*-specimen in the Leyden Museum is from van Diemensland and from Cook's voyage, meanwhile Cook's *male*-specimen from Van Diemensland was »the only animal of the Quadruped kind they got". My conclusion therefore is that Temminck's specimen either is from Endeavour river or is not one of the two specimens of Cook's voyage. It is colored like N°. 4, except the circle round the eyes which is darker.

10. Adult female. Van Diemensland. One of the specimens described by Ogilby in 1837 s. n. *Phalangista viverrina*. Head above, back and sides of body, tail and outside of legs dark ashy brown; ears behind, underparts of head and body and partially the inside of legs pure white.

11. Adult male. Van Diemensland. Less dark colored than N°. 10.

12. Not fullgrown female. Van Diemensland. Frank, 1845. Colored like N°. 11, but legs and circle round the eyes browner.

13. Adult male. Van Diemensland. Presented by the Sydney-Museum, 1881. Colored like N°. 10, but underparts of head and body and inside of legs greyish white, the base of the hairs being of a slate color.

There are seven skulls of this species in our Museum.

Since I wrote my paper »on the species of the Phalanger-genus *Pseudochirus*" (Notes from the Leyden Museum, 1884, p. 108) M^r. Collett published (Proc. Zool. Soc. London, 1884, p. 381) a paper »on some apparently new Marsupials from Queensland, collected by D^r. Lumholtz." M^r. Collett describes three new species of the *Phalangista*-group, one belonging tho the genus *Pseudochirus*, *Ps. Archeri*, another being, according to the author, a true *Phalangista*, *Ph. Herbertensis*, meanwhile the third should be the type of the new genus *Hemibelideus*, *H. lemuroides*. Notwithstanding the fine figures of the animals and of their skulls it is very difficult to get a good idea of the species, as the descriptions are somewhat confuse and not always agree with the figures. As to the measurements the author always gives the length of the body (with or without the head?). *Ph. Archeri* belongs to the *Pseudochirus*-genus according to M^r. Collett, but either in the figure nor in the description I can find any reason to believe that the character of *Pseudochirus* (the two inner toes of the fore foot separated from and partially opposable to, the other three) is really present. The female of *Ph. Herbertensis* shows in the figure this peculiarity and, if this figure is correctly drawn, *Ph. Herbertensis* too may belong to the *Pseudochirus*-genus and differs still less from *Ph. viverrina* Ogilby (*Pseudochirus caudivolvulus*) than M^r. Collett believes: in the description of *Ph. Herbertensis* he does not mention this peculiarity of the fore feet; and

although he pays attention to »the naked line on lower surface very long, about two thirds of the length of the tail", this line occupies in the figure of the male not about two thirds but about five sixth of that length. If the figure of *Ph. lemuroides* is correct than I believe that this species belongs like the former to the *Pseudochirus*-group, as the fore-feet demonstrate very clearly, and which has been overlooked in the description, meanwhile Mr. Collett compares his new genus with *Trichosurus* (having the fore-feet normal). In favour of his new species it is to hope that Mr. Collett will give more accurate accounts about them. The specific-name *lemuroides* is very unluckly chosen as we have already a *Didelphis (Trichosurus) lemurina* Shaw.

NB. As to *Dendrolagus Lumholtzi* Collett, I should like to know what difference can be found between this species and *Dendrolagus inustus*, besides some difference in the coloring of the body, which seems to be of a much paler hue in Collett's specimens. The author states that »skull and dentition seem not to differ in any essential way from that of the Papuan *Dendrolagi*": but as there are differences in the form of the skulls of the species of the Papuan *Dendrolagi*, quaeritur: with the skull of what Papuan species did he compare his *Dendrolagus* - skulls?

Trichosurus vulpecula.

1792. *Didelphis vulpecula* Kerr. The animal Kingdom p. 198.

1800. *Didelphis lemurina* Shaw. General Zoology. Vol. I. Part 2. p. 487, plate 10. — *Didelphis vulpina* Shaw. l. c. p. 503.

1830—31. *Phalangista fuliginosa* Ogilby. P. Z. S. L. p. 135. — *Phalangista xanthopus* Ogilby. l. c. p. 135.

1835. *Phalangista canina* Ogilby. P. Z. S. L. p. 191.

1841. *Phalangista cuvieri* (Gray) Waterhouse, in Naturalist's Library; Marsupiata. p. 268.

1843. *Phalangista (Trichurus) felina* Wagner. Schreber's

Säugethiere. Suppl. Bd. III. p. 76. — *Phalangista (Trichurus) melanura* Wagner. l. c. p. 81.

Kerr described this species in the following terms: »The tail is long, thick and hairy: for three quarters of its length it is black, and the origin is of a greyish colour, like the body. Inhabits New South Wales. — The head and body measure twenty-six inches, and the tail fifteen; the legs are short and of an equal length; the foot is long, and rests in walking as far as the heel; each foot has five toes, all armed with sharp crooked claws, except the thumb, or great toe, on each hind foot, which is placed high up on the foot, and has no claws; the head is long, with a pointed muzzle, which is garnished with ten or twelve very long black whiskers, which stand backwards, and are longer than the head; the ears are long, erect, and pointed; the upper jaw has four fore-teeth, and the lower two, which point forwards, both being like those of the Kanguru; on each side, in the upper jaw, are two small tusks, but none below; there are four grinders on each side in both jaws. The whole upper parts of the body, and first quarter of the tail, are of a grisly colour, proceeding from a mixture of dusky and white hairs; with a reddish-yellow tinge, chiefly on the head and shoulders; the rest of the tail is black; all the underparts of the body are of a tawny buff, which is deepest on the throat, where the bottom of the hairs is rusty brown".

Phalangista xanthopus Ogilby has the tip of the tail white, but this alone is not enough to create a new species, moreover Ogilby says »that in all other respects it is most closely allied to the *Phal. vulpina.*" One of our individuals has the tip of the tail white (vide infra N°. 3).

Phalangista canina Ogilby has shorter ears according to that author, but I find in Gray's List of the Specimens of Mammalia of the British Museum, 1843, p. 85, that the specimen described by Ogilby has the ears *injured.* The other differences between *Ph. canina* and *Ph. vulpina*

summed up by Ogilby are merely differences in color and have here no specific value (vide infra N°. 1).

For the rest I refer to what I said in my paper (Notes from the Leyden Museum, 1884. p. 108).

Our specimens present the following variations in color:

1. Adult female. Australia. Above greyish black tinged with coffee-brown, end of tail black; underparts white, each hair greyish brown at its base; ear-patch coffee-brown. This specimen was labeled *Phalangista canina* Ogilby and indeed its ears are conspicuous short; a nearer inspection however shows that the ears are *injured*. The skull and teeth present no differences with the same parts in the other specimens.

2. Adult male. Australia, neighborhood of Melbourne. Zoological garden at Rotterdam, February 1881. Above greyish black, end of tail black; underparts and ear-patch reddish yellow; a rusty brown mark on the chest.

3. Adult female. Australia, Swan-river. Verreaux. Labeled *Phalangista xanthopus* Ogilby. Colored like the former, but underparts white like N°. 1, ear-patch very inconspicuous, apex of tail pure white.

4. Adult male. Australia. Frank, 1844. Labeled *Phalangista felina* Wagner. Upperparts rusty red; hindparts of back with blackish, end of tail black; underparts yellowish white, each hair rusty at its base; on the chest an elongate rusty brown mark; ear-patch very inconspicuous. Skull and dentition entirely like the other skulls.

5. Adult female. Australia, Swan-river. Verreaux. Colored like N°. 1, but less dark. Ear-patch white and a rusty brown stripe on the chest.

25. Fullgrown male. Australia. Colonial Museum, Haarlem, 1875. Upperparts greyish rusty; end of tail rusty black; underparts orange brown; a rusty brown stripe on the chest; ear-patch yellow brown; feet yellow brown.

6. Nearly fullgrown male. West-Australia. Labeled *Phalangista felina* Wagner. Colored like N°. 4; end of tail dark reddish black, ear-patch white.

7. Young male. Australia. Upperparts of a beautiful fine chocolate tinge, end of tail blackish brown; underparts white; the base of the hairs like upperparts; chest-mark inconspicuous, ear-patch white.

8. Young female. Australia, neighborhood of Melbourne. F. Müller, 1865. Colored like N°, 2; no mark on the chest.

9. Very young female. Australia, 1873. Upperparts greyish black; end of tail black; underparts, ear-patches, hands and feet white.

10. Adult male. Van Diemensland. Type specimen of Temminck's *Phalangista vulpina* (Mammalogie. I. p. 5). Upperparts brownish grey, base of tail like back, for the rest black; underparts rusty yellow; a rusty brown mark on the chest; ear-patch dirty white.

11. Adult female. Van Diemensland. Voyage of Lewis. Upperparts rusty black, darker towards the hind part of the back; tail black; underparts rusty brown.

12. Adult female. Van Diemensland. Verreaux. Colored like the former; ear-patch brownish black.

13. Nearly fullgrown female. Van Diemensland? Colored like the former, but less dark.

14. Younger male. Van Diemensland. Frank. Upperparts and tail brownish black; underparts brownish with a reddish shade; a rusty brown broad mark on the chest.

15. Very young male. Van Diemensland. Colored like N°. 9; mark on chest hardly visible.

We possess nine skulls of this species and the skeleton of N°. 2. The latter presents 13 costales, 6 lumbares, 2 sacrales and 25 caudales.

Remark. Mr. Oldfield Thomas of the British Museum fixed the attention of the naturalists to Kerr's Animal Kingdom (Annals and Magazine of Natural History, 1879, 5th series, Vol. IV, p.p. 396 and 397). Mr. Thomas stated that *Phalangista vulpina* Shaw is a synonym of *Didelphis vulpecula* Kerr.